DOCUMENT RESUME

ED 091 829 EA 006 183

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TITLE Vandalism and Its Prevention.
INSTITUTION California Association of School Business Officials. Southern Section.
PUB DATE Mar 71
NOTE 29p.; Prepared by the Southern Section School Building Committee; Tables may reproduce poorly

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS Administrator Guides; Annotated Bibliographies; *Building Materials; Case Studies; *Costs; *Electromechanical Technology; Electronic Equipment; *Prevention; Technological Advancement; *Vandalism
IDENTIFIERS School Security

ABSTRACT

As a result of the sharp increases in the costs of vandalism in the last few years, technical developments in intrusion devices have been rapid. This report provides an overall view of vandalism prevention emphasizing the various devices for detecting and reporting unauthorized entry into buildings and giving information about the activities of those who have entered. Stress is placed on the deterrence of vandalism through the use of appropriate materials and design in school buildings. An annotated bibliography provides guidance for those who wish to pursue the subject further. (Author/JF)

ED 091829

SECTION 14

JUN 7 1974

Vandalism and its Prevention

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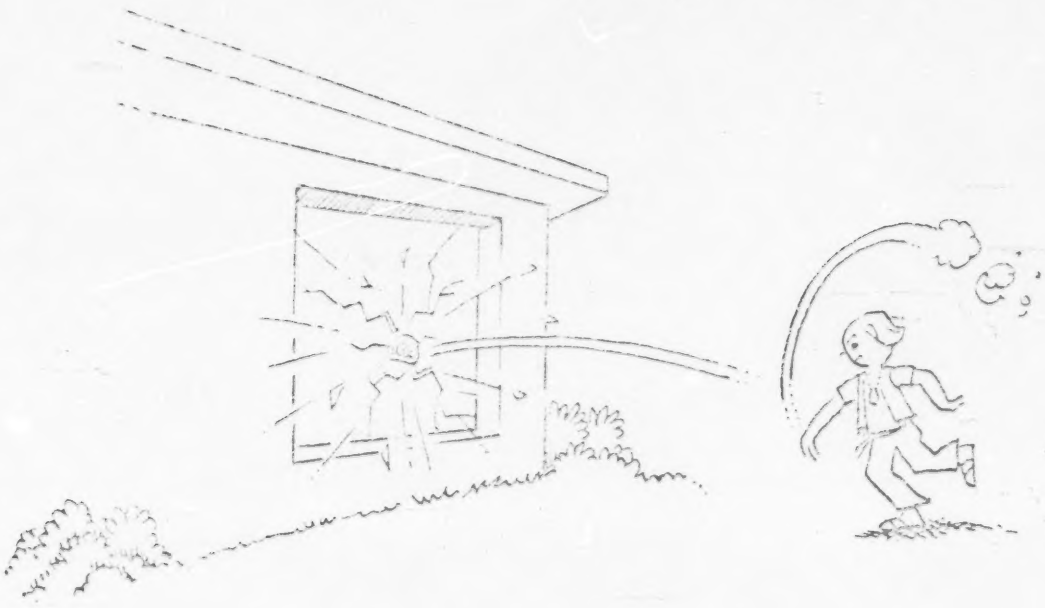

EA 006 183

MARCH, 1971

SECTION 14 -- VANDALISM AND ITS PREVENTION

The problems presented by the occurrence of acts of vandalism and malicious mischief are of major concern to governing boards, all school staff, and citizens in the majority of school districts today. The frequency and total dollar value of losses has risen sharply in the last few years. Because of the great interest in this field and the fact that technical developments in intrusion detection devices have come rapidly, the School Building Committee of Southern Section CASBO has decided to present this report. The emphasis is on discussion of the various devices for detecting and reporting unauthorized entry into buildings and giving information about the activities of those who have entered; in addition, stress was placed on the deterrence of vandalism through use of appropriate materials and design in school building. An attempt is made to give an overall view of the subject, however, and the annotated bibliography provides guidance for those who wish to pursue the subject further.

DEFINITION OF VANDALISM

Physical Damage

Dr. Smith recommended (19) that school districts should adopt a broader and more realistic view of what constitutes acts of vandalism, including those caused by ignorant and careless offenders. In this view, Bradley defines vandalism (3) as "any willful act or any act through ignorance or carelessness which results in destruction, damage, loss, waste, or defacement of public school property." With this approach one can realize that the unnecessarily shortened life of buildings, furniture, equipment, and books should be identified as vandalism, and not just those events in which police are called, insurance claims are filed, replacement requisitions are written, and work orders specially written. Abuse of hardware and littering of grounds are examples of occurrences which cause expenditure of taxpayer money which could be reduced or eliminated.

Psychological Cost

It is difficult to assess the damage to the morale of staff members and students from the experience of large-scale and/or persistent small incidents of destruction of school property. It seems certain that in many situations a minority of the student and community population causes unfortunate feelings of anxiety, distrust, and despair. Destruction of records, lowered standards of physical care, and fortress-like architectural considerations can flow from vandalism.

Greenberg points out that school officials in many situations are pressured to do something to try to control vandalism (12). With about 170 manufacturers and distributors of fire and burglar alarm systems, this something may very well be the purchase of an alarm system. Such systems have mixed results, however, and do not handle the guilt feeling that the schools and society are responsible for vandalism (13). Grieder's comments are quite pertinent:

> Some say that there must be something wrong with a vandalized school. The curriculum is irrelevant, the teachers incompetent, the facilities no good, instructional methods and materials outdated, rules and regulations

too numerous, the schedule inflexible, etc. Yet in schools of the best caliber, affording the finest opportunities, and staffed by creative, enlightened and sympathetic teachers, vandalism also occurs.

Relationship to Theft and Burglary

It is chiefly when one considers insurance matters that he realizes the interrelatedness of the many ways in which public school property may be vandalized -- and the word "vandalized" is used in the broad sense of the definition given above. In a single instance of vandalism one may experience damage to grounds, buildings, and furniture, covered by a vandalism and malicious mischief endorsement to a fire insurance policy; separate destruction caused by arson; and theft of equipment in what can be classified as burglary. The current report of the CASBO Southern Section Insurance Research Committee emphasizes the tying together of all forms of property loss (5). Underlying this consideration and of basic importance is the need to establish a system for keeping adequate records of the losses and costs of vandalism.

EXTENT (COST) OF VANDALISM

Amount of Loss

Those who have studied the subject in depth agree that most school districts seriously underestimate the cost of vandalism; such a fact would be a logical consequence of an incomplete definition of the subject. In addition, Dr. Smith's finding (19) that professional literature dealing with the problems of vandalism tends to emphasize the sensational, both in occurrence and prevention, would help explain the tendency to overlook the ongoing abuse of buildings, grounds and equipment occurring daily in school.

There is no way to give an accurate figure for the cost of vandalism nationally due to the lack of such an effort and the inadequate records kept by many school districts. The U.S. Office of Education and the National Education Association estimate the amount to be between $100 million and $200 million for the year 1969 (12, 13). A group of large insurance companies placed the figure over $200 million. Direct losses for the City of New York in 1968 were $2,716,757, while the true cost was estimated at more than $5 million (12).

A recent national survey of school districts (22) secured 581 usable returns from districts in three enrollment ranges: 6,000 to 11,999, 12,000 to 25,000, and above 25,000. Of the $31,951,000 loss total reported fire damage accounted for 37.1%, glass breakage 29.4%, property destruction 18.2%, and equipment theft 15.3%. The costs per pupil for the enrollment categories were $2.64 for over 25,000, $1.93 for 12,000 to 25,000, and $1.90 for 6,000 to 11,999.

Studies have provided information about vandalism costs on certain budget categories (3, 19). Percentages of five budget categories were shown as follows: operations, 36%; maintenance, 19%; textbooks, 21%; library and supplementary books, 8%; instructional supplies, 15%. The cost per pupil in mid-1960's dollars came to these figures: operations, $2.59; maintenance, $1.14; textbooks, $1.44; library and supplementary books, $.55; instructional supplies, $1.03. Recovery of loss-cost from vandals through payment or work rendered is a goal supported by many people, but data show that the rate of recovery is very low, averaging just a few per cent of the cost.

Geographic Considerations

A conclusion can be reached from the literature that vandalism losses-costs can be related to concentration of population. The onslaught of civil disorder and student unrest has been greatest in urban areas. It is very evident, however, that there is hardly a school district in the nation which can afford to be complacent about being subject to serious instances of vandalism. A large-scale study of California school districts (9), for example, shows that 14 districts in the 25,000 to 60,000 enrollment range had a considerably higher ratio of total fire losses to collections for 3 out of 4 recent years than did the "big 5" districts or those under 25,000 enrollment.

Socio-Economic Considerations

Bradley (3) reported that "there are no real differences in total cost (losses) attributed to social or economic factors--areas of residence seem to determine type of vandalism and malicious mischief, but total costs remained fairly constant." The Stanford study (12) devotes a chapter to defining the offenders. It is clear that juveniles account for the great majority of crimes against property, and there is a greater incidence in poorer areas; although the findings about socio-economic status of vandals are rather mixed, there is no cause to feel secure in schools located in privileged suburban neighborhoods. There is some basis for the case that it is the school which is delinquent when there is considerable vandalism.

Times of Greatest Incidence

Studies clearly show that late afternoon and evening hours bring the greatest incidence of vandalism, with weekends accounting for approximately three-fourths of the vandal acts. Bradley (3) identifies the spring of the year as containing forty per cent more vandalism than in the fall.

PREVENTION OF VANDALISM

Development of Positive Behavior on the Part of Students and Community

Bradley concluded (3) that in schools where the students have a pride in their own appearance and that of the school there is far less vandalism. Such a common-sense statement will find general support; achievement of such a condition, however, may seem difficult in some circumstances. Bradley recommends that definite attention be given in the instructional program to development of wholesome attitudes toward public and private property values.

School-community cooperation is pointed to in many cases (1, 10, 13, 19, 24) as being effective in preventing the occurrence of vandalism through fostering better attitudes and in keeping surveillance of property by those who live nearby. The following statement is most emphatic (24):

> The single most important factor affecting a school building's safety is the attitude of the neighbors toward what goes on in that building. What happens around a school after hours is directly related to the respect the principal, teachers, secretary, and custodians have earned from the students and neighbors.

Appropriate Materials and Design in School Building

Increased attention is being given to "thinking vandalism prevention" when new schools are being designed or alterations, modernization and additions being planned. Sound and careful thought devoted to anti-vandalism considerations in the types of materials, basic configuration of the buildings, placement on the site, points of access, location and number of windows, exterior and interior finish materials, types of hardware and light fixtures and location of mechanical equipment is extremely important. Proper planning can avert problems which either are always basically unsolvable or can only be handled by expending large sums of money for labor and materials in constant repair.

Arson

Arson is the most common form of vandalism which results in very costly damage. Susceptibility to fire damage should be given greater consideration in design than has been necessary in the past. The potential damage to buildings from fire varies from slight to total, depending on the material of construction, height, area, protection of vertical openings, concealed spaces, methods of assembly and workmanship and fire resistance of the structure.

The following are excerpts from a report prepared by the Committee on Fire Damage to Building Assemblies of the Advisory Engineering Council of the American Insurance Association:

1. General Factors Affecting Damageability

   a. Combustibility of contents. The more intense any fire is due to the nature of the contents, the greater is the anticipated damage to the building.

   b. Large open areas and unprotected vertical openings. Buildings of large open areas or with unprotecfed vertical openings accelerate any fire and hence sustain greater damage.

   c. Floor and roof supports. Unprotected metal floor and roof supports may be exptected to collapse after a relatively short period of fire exposure. Heavy timber supports may be expected to resist collapse for longer periods of time than ordinary wood joist construction under fire conditions.

   d. Floor and roof assemblies. Various types of fireproofing applied beneath floors and roofs are subject to serious damage in a short period of time not commensurate with the fire resistance rating of the assembly.

   e. Walls, partitions and interior finish. Certain walls, including partitions and their coverings can sustain serious losses from small fires due to their flammability or their smoke and water damage susceptibility.

2. Conclusions

The following statements are the most pertinent conclusions from a study of this report and show the need for an evaluation of the damageability of various types of assemblies. The detailed description and vulnerability of various building components outlined in this report should be beneficial to insurance underwriters in establishing a more realistic loss estimate, particularly in buildings constructed of non-combustible materials.

a. Damageability cannot be equated with fire resistance.

b. Buildings constructed of non-combustible assemblies having established fire resistance ratings may suffer extensive damage in much less time than the applicable rating.

c. The fire damage to building assemblies is contingent upon many structural features as well as the nature and quantity of combustible contents.

d. Ranking of the various types of non-combustible building assemblies according to their susceptibility to fire damage cannot be precisely established. Not only are there many factors influencing susceptibility to fire damage, but there are also many variables in the nature and extent of damage which may be applicable to each type. Even under a standard exposure fire which is possible only under test conditions, the same type of assemblies will often exhibit differences in the extent of damage and the time at which such damage occurs. However, on the basis of fire test data and fire loss experience, judgment suggests that non-combustible floor or roof assemblies and their supports may be placed in the groups shown in the following table.

Susceptibility to Fire Damage

(The sequence within each group is subject to variations under varying conditions.)

Low

Monolithic reinforced concrete construction.

Precast concrete (other than prestressed or post-tensioned) or gypsum floors or roofs on concrete supports or on steel supports individually fireproofed with masonry or concrete.

Medium

Poured concrete or gypsum floors or roofs on steel form units with directly applied fireproofing or ceiling and supports.

Prestressed or post-tensioned concrete floors or roofs on masonry, concrete or fireproofed steel supports.

Poured concrete or gypsum floors or roofs on steel form units with membrane ceilings below beams and with fireproofed columns.

Roof decks of mineral fiberboard or non-combustible structural vegetable fiber units on bar joists with membrane ceilings and with fireproofed columns.

Metal deck roofs with membrane ceilings and with fireproofed columns.

High

Concrete, gypsum or other floor or roof deck on exposed metal supports.

Metal deck roof on exposed metal supports.

Wood frame construction.

It is normally found that the maximum fire damage to a building occurs when major structural components require replacement; however, a severe loss may occur to components other than structural, depending on the extent, method of installation and characteristics of materials used for the interior finish.

Interior finish, as used here refers to the surface material of walls, ceilings, floors and other interior surfaces affixed to the building structure as distinguished from decorations or furnishings not so affixed. In many buildings, particularly with shop and storage occupancies, the interior surfaces of walls or roof structures are unfinished; this is often referred to as "open finish."

There are innumerable materials used for interior finish, including both combustible and non-combustible materials. Combinations of these materials may have fire characteristics slightly different from those of individual components considered separately.

The surfacing of non-combustible materials with thin materials such as paint or wallpaper normally does not contribute significantly to fire spread although surfacing with highly combustible materials such as some fibrous cloth materials will do so. Combustible interior finish material such as acoustical tile ceilings, when installed so as to form combustible concealed spaces, generally are more subject to damage and greater fire spread than when applied directly to solid non-combustible surfaces.

In addition to the fire damage to materials used for interior finish the susceptibility to damage from smoke and water should be considered in evaluating total potential damage.

General Design and Materials

A goal which should rank near the top for both school officials and architects in designing new or remodeled facilities is that of producing attractive and vandal-resistant buildings. Many writers caution against over-reaction to the current heavy costs of vandalism in the form of designing fortress or prison-like facilities; the immediate result may be to deter the possibilities of vandalism, but the long-range psychological effect may very well add to the basic causes of destructive behavior.

Greenberg states in the Stanford study (12) that "perhaps the most subtle, negative effect is the general appearance of an armed, defensive fortress designed to keep the youngsters 'in line' during school hours and off the premises after school hours."

The foremost suggestion with respect to how to achieve the goal stated above is simply that of having the school people and architects and engineers "think vandalism prevention" when planning the facilities. Until quite recently this was rarely done, so that there are rather modern plants today which have features that assist those individuals who--either on a planned or spur-of-the-moment basis--engage in destructive activities. A few specific points will be made here, but individual circumstances will primarily dictate the design and materials choices which are made.

Some specific suggestions are as follows:

1. In site selection avoid if possible long, "narrow" sites or ones which are not rectangular, as such sites inhibit design which maximizes security.

2. When developing the site master plan think of limiting the points of access, especially for secondary schools, and of having unobstructed lines of vision for both external supervision of the site and for staff members during the day.

3. Minimize or eliminate all building features which allow persons to remain hidden from view, such as breezeways and alcoves.

4. Carefully control the number and location of windows, and analyze the glazing to be used. Acrylic plastics and polycarbonates can virtually eliminate breakage but must be carefully installed and are susceptible to having obscenities scratched into them.

5. Rigorously avoid providing easy climbing routes to roofs, such as exposed downspouts and protruding decorative masonry.

6. Provide for full exterior illumination of the buildings and grounds, preferably by floodlights mounted atop the buildings and controlled by electric eyes. Decorative ground lighting is very vulnerable to destruction. Use the most durable shades possible, such as "lexan," for exterior light fixtures which are within reach.

7. Any mechanical equipment on the exterior should not be at ground level and should be shielded.

8. All ducts and vents to the outside which are conceivably large enough for entry (think of small children) should have protective grilles placed in them.

9. Skylights have often been points of entry to buildings.

10. Use the best quality hardware possible, provide sturdy center mullions for double doors to the outside, and have keys stamped "Unlawful to duplicate." Consider use of a "maximum security" keying system which virtually eliminates key duplication.

11. Analyze the type of exterior and interior finish materials with respect to marring, cutting, fire resistance, normal wearing qualities, and appearance.

12. Consider provision of a vault large enough to hold vital records to give fire and general protection; portable file cabinets can be wheeled in at the close of the day.

Minimizing Personnel Security Lapses

Dr. Smith reported that "staff security failure and staff irresponsibility are major causes for vandal loss." (19) More specifically, he found that certificated personnel were less responsible than classified employees, and that secondary teachers were probably more irresponsible than were elementary teachers. Both Smith and Bradley recommended that strong efforts should be made to develop and/or enhance staff responsibility for prevention of all types of vandalism. Key security is certainly a point of great concern.

Utilization of Local Police

The local police force will often be able to give some degree of attention to school plants in their patrols at night, on the weekends, and during vacation times. In addition, if some type of intrusion detection device is used, the police may allow the signal to be received by them. From the educational, preventive point of view, the police usually will be glad to participate in a program whose goal is to develop respect for people and property. Another facet of utilization of local government is that of obtaining recreational employees to conduct supervised programs in the evenings and weekends using school facilities. This activity helps prevent vandalism.

Deployment of Classified Staff to Minimize Vandalism

Maintenance and operations personnel can be assigned in such fashion as to give greatly increased "coverage" of school facilities. The presence of workmen on site is normally a real deterrent to vandals. Assignments can be made so that there is twenty-four hour, or near twenty-four, coverage on Mondays through Fridays, and maintenance, grounds, and custodial work can be performed on weekends. Some disadvantages may be encountered in the way of extra cost for shift differentials and unpopularity of weekend work; in addition, custodians and maintenancemen should not be thought of to a significant extent as security personnel, especially in areas where personal assaults are entirely possible.

Specific Suggestions

Some specific points to be considered are as follows:

1. Security guards are felt to be quite effective, but are rather costly.

2. Notices on the premises (especially entry doors with badge-like insignia) that security patrols protect the buildings are effective, but if the patrols are non-existent or very "thin" the effect will wear off.

3. Guard dogs have been used in some cases, with glowing reports as to results. Community reaction must be considered.

4. Employment of a security and anti-waste specialist is recommended in school district of 8,000 enrollment or greater (19); in all districts some administrator should have a specific responsibility for vandalism prevention.

5. Based upon a broad definition of vandalism and complete compilation of the costs of vandalism, informational releases to the media are recommended on a regular basis covering the cost impact and what could be done with this money if not spent needlessly.

6. Supervised recreational activities in school facilities in the evenings and on weekends usually reduce vandalism.

Devices for Detecting Fire and Intrusion

As fire is usually involved with intrusion and vandalism, adequate devices are recommended to detect heat, smoke or fire at an early stage along with intrusion detection. In contrast with some of the more sophisticated electronic motion detection systems, heat, fire (light) and products of combustion (smoke and combustion gases) systems are comparatively economical to install and maintain.

Automatic sprinklers provide the best immediate and positive protection against fire. In new construction consideration should be given to this protection as it also permits greater building areas, increased fire resistance in basic constructions, and in most cases reduction of insurance rates.

There are many types of intrusion sensors and systems on the market today, and more makes are being added daily. These devices can be placed in the two categories of non-electronic and electronic. Non-electronic sensors are such break or make-contact items as door switches, window switches, window tape, break string or wire, pressure sensitive floor mats or sensing tapes, vibration switches, and air pressure switches. Electronic sensors are such items as proximity or capacitor systems, pressure or stress systems, audio frequency (sound detection) systems, ultra-sonic systems, radio frequency system, and infrared, laser, visible light-actuated systems. In this report items discussed are those systems considered to be most applicable to schools

Non-electronic

1. Non-magnetic or mechanical contact switching devices such as door switches are the least expensive type of intrusion detection device. Such switches should be recessed in the door casing when possible with all wiring concealed. In buildings with no windows door switches are quite adequate. Surface mounted switches accessible to junior high, senior high and college students present a challenge and are more apt to be tampered with or jumpered without knowledge of the staff during the school day when the system is off. Surface switches should be used only in supervised areas in schools. Many of the magnetic switch non-sealed contacts corrode or get out of adjustment and become useless. Recessed door switches should be of the quiet and adjustable type. All switches must be connected in series such that switches are closed when the door is closed. Such a circuit provides some degree of supervision. The sealed reed type magnetic switch is a very good product.

2. Window tape. Such a device is an inexpensive system for factories, warehouses, storage areas which are not located at a school, and commercial offices. The system is much too easy to jumper or cut without notice. The system must be continually monitored to be of value; vandalism on such a system is high. It is not recommended for schools.

3. Window or vibration switches may be used on windows which are above the normal reaching height. The window with such a switch when mounted on it, transmits a vibration into the switch, when struck, which makes contact, thus an alarm. Such switches must have adjustable sensitivity and be out of reach of students from the inside.

4. Floor mat pressure switches or pressure sensitive tapes can be used successfully under classroom carpet. The life of such a device depends on quality of material and installation care. The area covered must be large enough so that it cannot be jumped over if its location is known by intruders.

Electronic

1. Sound actuated - audio frequency. This system deals with the normal audible range of frequencies such as 1500 Hertz to 5,000 Hertz. Sound sensing systems can be set to pick up break in sounds but often the rest of the system is too sensitive; thus, false alarms are often set off. Sound lockouts must be used to cancel normal building and exterior noise. Ambient noise circuits must be provided on all systems. Noise sensing systems should not be used where the following problems exist:

   a. Heavy traffic noise, such as that created by large trucks in an area with up or down grade close to site, rough streets, or where noisy motorcycles are used; having buildings close to the street heightens this problem. Blowing horns and barking dogs are even problems.

   b. Ground shock from heavy industry which will rattle buildings, vibrate walls, equipment, etc.

   c. Noise from railroad yards.

   d. Sounds in school yards used as play areas after school, weekends and during vacation. Doors, walls or windows being struck by balls will set a system off.

   e. Sounds from intermittent air conditioning or noisy clocks and mechanical equipment; lock-out equipment can be used, but then sensitivity of system is somewhat reduced.

Noise sensing on large sites such as secondary schools and colleges must be zoned. Zones must be identifiable in some manner. Each building could be considered as a zone. Noise sensing systems should have sound verification associated with them to assist in determining the source of the sound.

Some audio system problems to be considered are:

a. If classroom speakers are used as a sensing medium, the speakers must be protected against possibility of cone puncture and removal from the wall. Should speaker wires be shorted, the zone sensing system is useless.

b. Speakers must be located as high as possible and should be recessed in the ceilings.

c. Corridor speakers should be of a rugged horn type, unless of a special properly protected type and flushed in ceiling or wall near the ceiling. Low corridor speakers do not last.

d. Wiring must be concealed and be out of reach of students.

Experience shows that special ceiling mount microphones are more reliable than surface mounted P.A. system speakers. Speakers are quite often vandalized or taken while the system is out of service. Thus, the system is useless when turned on.

Sound is a relatively inexpensive method of securing an entire site; however, there can be legal problems with its use. School districts should consult the local telephone company and their county counsel or legal advisor and determine if the system is legally acceptable. Some telephone companies and county counsels consider such a system as illegal and reference the Penal Code on eavesdropping and "law enforcement officers intercepting communications;" also, another pertinent subject is "crimes and criminal procedure -- interception and disclosure of wire and oral communication."

2. Light actuated. Some types of light sensing systems are the photo cell/flashing or fixed light, ambient light actuated system, and ambient light compensating, as follows:

a. The photo cell/fixed light is most common and least costly but the easiest to damage or put out of order as it must be located in a lower area of a room. This equipment is not recommended for schools.

b. Ambient light actuated system operates on a change in ambient light falling on a cell. The circuit has a time delay of about 10 seconds. These cells have a cone and lens which restricts the viewing zone to about 15-30°.

Care must be taken on installation that repeated fast acting or pulsing light is not viewed directly by the cell; this includes some fluorescent lights. An occasional light pulse such as that from a passing car's headlights will not set the units off. A minimum light level should be maintained, in the secured area, by incandescent light. This equipment should be installed with a DC standby rechargeable battery power source, so that the system can operate during a power failure. The system has a long range, with up to 200 feet being protected with about 5 footcandles of ambient light on the subject. A fire in the viewing angle of some sensors will be detected, but not distinguished for a separate report. The ambient light systems

are not affected by sound, vibration, air movement or over normal temperature ranges if securely and rigidly installed. These systems are relatively stable and free from excessive false alarms.

c. Ambient light compensated units act the same as the above unit with the exception that any change, rapid or slow, of the surrounding light will not affect the system; only a change in light within the normal viewing angle will operate the unit. Such units have a narrow alarm viewing angle.

d. Windows must be covered when the system is on. Outside trees or shrubs when moved by wind will cause the daylight in the secured area to flicker; thus, an alarm will be set off during daylight hours. Such a condition is critical.

e. Infrared light actuated systems may eliminate stray light false alarms but the equipment cost is considerably more than the normal ambient light system. It is important that in schools the light sensors must be located out of reach of the general public, such as above doors, on ceilings, or walls.

The detectors should not be conspicuous. They may be flushed into walls, ceilings, cabinets in offices and special fixtures. Care must be taken that no translucent material is placed over the cell at some time during the "off" period while the building is in use; such a material allows light to enter the cell for normal operation and no detail movement can be seen. While relatively rugged, the units could be damaged when struck. A heavy steel housing is recommended when used in an open area or student areas.

The control boxes should be located in a normally locked and secured room under the control of the principal or superintendent. Wiring can be installed exposed or in a raceway.

Tamper circuits should be provided with all security systems utilizing accessible wiring, particularly exposed wiring. This is accomplished with a series normally closed circuit connecting all devices. Any opening in the circuit would set off an alarm relay to indicate to office, dialer, or any other indicating device that a line or piece of equipment has been subjected to tampering. It is important to zone this circuit on large sites and provide an annunciator in the main office.

3. Electronic sensing. There are several methods used to detect motion by electronic means, viz., radio frequency, radar, high frequency energy absorption, ultra-sonic and proximity. These systems are expensive for most school use; however, there are locations where large areas must be covered and these systems become economically feasible. The wiring system is not expensive. Large systems should be zoned.

a. The radar system uses a dappler principle; thus, when the antenna is vibrated by building movement or air movement, a false alarm may be sounded. Fluorescent fixtures with bad lamps or ballasts may cause an alarm. Electronic equipment such as welding equipment operating in the near vicinity or an object getting too close

to a door with the system range extended beyond the door may activate the system. Also, some systems cannot operate over a broad temperature range or for long periods without constant adjustment. Some circuits are unstable.

The antenna, if bent, changes the radiated signal pattern and could fail to sense an intruder; hence, the antenna should be concealed or enclosed in a protective device and be rugged in construction. This sytem's cabling, if exposed, should be equipped with a tamper alarm circuit. The system can be left on at all times with only the alarm reporting circuit turned off during building use.

b. The R. F. or high frequency energy absorption system operates similarly to radar but may not apply the dappler principle. The system is not affected with air movement or small building movement if the antenna structure is rigidly supported. Fluorescent lamps do not appear to affect the system. However, there are times when there may be a nuisance tripping, and temperature may be a factor. The system must be set for inbuilding motion only.

Antennas must be rugged and inconspicuous in public areas. They can be well shielded and made to look like lighting fixtures. The system's cabling system, if exposed, should be equipped with a tamper alarm. The system should be left on at all times with only the reporting circuit turned off during building use hours.

c. The ultra-sonic system uses a dappler principle; multiple cables are required for each protected area. A false alarm can be caused by air movement due to the air handling system or wind through a broken window, sonic boom, earthquake, or rattle of a loose door. The system sensitivity should be adjustable.

The signal transmitter and receiver for large systems may not always be as rugged as need be. They can be damaged when struck by books or other objects, putting the system out of order. The sensing units can be recessed in walls and ceilings but the signal pattern is changed. Rapid temperature change can affect some circuits in the system. The system should be turned off during the day while the building is in use as the high frequency audio signal sometimes can be heard by children and women and is objectionable to them.

d. The proximity system requires that one must approach or touch a protected device. Changes in atmospheric conditions can change the sensitivity and animals can set the alarm off. Connection wires usually are detectable. The system is best used on safes, metal desks or lockers.

4. Stress Sensing. A device mounted on the underside of a beam provides an unbalance to an electronic bridge circuit when the beam receives a foreign pressure, such as from a person walking on the floor. This is

a very sensitive system and requires care in moving furniture in a room so as not to unbalance the system. Gradual changes in pressure can be cancelled out; thus, changes due to heating of structure will not alarm the system. This device could work well under the floors of raised bungalows.

There are numerous methods of reporting alarms, some of which are as follows:

1. Direct lines within the plant to a central annunciation station within the plant.

2. Direct leased public or district-owned phone line to a remote control station which is either district-owned, leased service (alarm company), or at the police department if the police will accept such a service. In smaller communities the police will often provide this service.

3. Automatic phone dialers

   a. Tape dialing and tape message reporting; with one to four channel dialers being available.

   b. Tape dialing and tape message site and zone reporting with an audio connect through to allow audio monitoring of a sound monitoring system or activation of electronic reporting equipment at central station.

   c. Electronic dialing - digital reporting through an automation multi-zone dialer over phone lines to a receiving console containing readout printer and/or lights for location, zone, and type of violation; printout of date, time, location, zone and type of violation can be included.

4. All dialers should be controlled by site time clocks, holiday and key bypass switches. Some electronic dialers can be turned on and off remotely from the central station, and systems can be activated for test purposes. Systems at all times should be activated when their tamper circuit is violated.

5. At each site each zone should be equipped with an annunciator to provide on the site reporting of status of the alarm system. This is a must with a door switch system. It is important that all doors with alarms be closed before the system is activated for reporting.

6. On-site short wave transmission and receiving. Many sites have few conduits in which to install wiring between buildings for an alarm system. There are available low power transmitters which will cover from 150' to 200' a relatively false alarm free signal and small receiver to receive same. This equipment is inexpensive compared to the cost of installing conduit and wire.

   Intermediate booster units are also available to extend transmission range. The transmitter is an intermittent transmitting device.

7. A very effective way to provide a security car with immediate information is by using direct radio transmission from the school site to a car by a tape recorded message, automatically transmitted over the air when the system is activated. Some car receivers are available with automatic information recorders which will handle calls from several sites.

The choice of a reporting system is governed by the distance and the number of sites to be protected. It stands to reason that the larger the number of sites and zones to be covered, the more automatic the system must be to keep the central receiving personnel to a minimum. Where only a few sites exist to be protected, a simple phone line and tape dialer may be sufficient and by far the least expensive.

The dialers generally range in cost from $150 to $700 depending on zone capability. At present, all dialers connected to a public phone line must have a telephone company furnished coupler. A special rate accompanies the coupler. In all cases, the dialer chosen must have the ability to cease a phone line if in use or not. Desirably, the dialer should be on an unlisted number known only by security personnel.

Under the heading of reliability one would say that a method of verification of calls is important due to the fact that the various systems do experience false alarms. School districts may or may not have a security force and local police must be called. When such a call is made to the police there must be a bonafide break-in or intrusion. Too many false alarms reduce the efficiency of answering personnel.

The following are a few methods of verification for basic systems:

1. Sound actuated -- Verification by listening over communication line by on-site security office or special answering service.
2. Light actuated (associated with sound verification) -- Listening for sound verification over communication line.
3. Radar actuated -- Audio verification or sound pulse verification or both.
4. Radio frequency energy absorption -- Light verification or audio verification.
5. Ultra-sonic -- Associated sound verification or sound pulse verification.
6. Light actuated -- Associated sound verification or sound pulse verification.

It can be seen that any combination of systems can be used to verify a call. At present, it is hard to determine the best system for all cases. One must evaluate the buildings and determine the most logical grouping to use, keeping in mind cost, vulnerability, maintenance, reliability, surrounding conditions.

Fire reporting can also be associated with a security system. Only the correct choice of reporting method need be selected. At present, the local fire departments must be contacted to determine if they can accept such a call directly or if it must go through an approved answering agency.

In some areas where the district has no security personnel, alarms should be handled by authorized personnel such as an alarm company with a guard service available to it. In some cities the local law enforcement office will accept an alarm; in other cities the alarms are associated with the local fire alarm system.

A "CASE STUDY" REPORT

A PROGRAM OF VANDALISM PROTECTION IN THE ROWLAND SCHOOL DISTRICT

A procedure to combat the increase in acts of vandalism has been developed with promising results and considerable success in the Rowland School District. Although the implementation of this procedure still has problems and is not a perfect one, the decrease in vandalism costs to the District has been most gratifying.

The concentration of effort has been in the following areas:

1. The installation of audio detection alarm systems at selected "problem" schools.

2. The scheduling of a Tuesday through Saturday work week for certain Grounds and Maintenance Personnel.

3. The solicitation of assistance of residents in the community to report any unusual activities to the proper authorities.

4. A program of restitution for those apprehended in acts of vandalism.

Installation of Audio Detection Systems

This system consists of sound detection devices which can operate under any set conditions. The device triggers a fool proof alarm at the local police station and the response is immediate. These devices can be set at varying degrees of sound depending upon need and circumstance.

A Pilot program was set up at one of our schools that was being continually hit with acts of all kinds of vandalism. Shortly after the installation of the system, its worth was proven with dramatic effect. A group of young boys threw an old chair through a window to gain entrance to a school building and proceeded to systematically and literally tear it apart. The police were alerted and arrived in time not only to apprehend the juveniles but to put out a fire that had been set. Without the alarm alerting the police, conceivably a major loss would have been suffered by the school district.

We have installed alarms in other selected schools since the above occurrence and to date no serious acts of vandalism have occurred at any of the schools with alarm systems. The community has definitely reacted to the knowledge of the alarm systems. While the exact location of each school installation has not been publicized, the idea that any or all schools may have been "bugged" seems to have a deterrent effect. These systems do have numerous "false" alarms, but the extra effort in checking these out are well worth the results in expenditure of time and money. Although this system is not a cure-all, it definitely appears to be well worth the minimum costs (approximately $1,000.00 per school) compared to the previous outlays in vandalism repairs.

Scheduling of Irregular Work Week

While this is not a new idea, it is new to our District. It actually serves a two-fold purpose:

> The presence of school personnel on Saturdays acts as a deterrent during those hours where previously there was no one visible or available to react to problems of vandalism.
>
> Work that cannot be done during school hours (painting, plumbing, etc.) can be done on Saturday.

In addition to the above, we also have "built-in" security during the regular week with night custodians working until 11:00 p.m.

P :itution Program

This has been the most difficult aspect of our program but in many respects has been the most rewarding.

The idea of making parents pay for their children's acts of vandalism is not in itself an effective method for reducing vandalism. Also, many of the juveniles who commit these acts are either from broken homes or whose famil es are on county or state aid. The extra time in "man-to-man" talk and counseling with the juvenile appears to be not only a must, but usually results in a better understanding on both sides. Where the parent is financially unable to pay for damages, we have set up a program where the child works off his debt at a reasonable rate per hour which is credited to his account. The key idea appears to be that we are not acting as policemen, jailers, etc., who are interested in punishment, rather that we are employers interested in obtaining dollar-for-dollar value of labor in exchange for that dollar value in damage.

Unfortunately, an equitable solution to this dollar amount has not been resolved with the insurance carrier. The time the District spends in counseling, setting up the program, arranging for transportation, etc., is not taken into consideration by the insurance carrier. The work performed is usually not of the best quality or at the time of our own pre-scheduled work load. The insurance carrier expects and demands that the actual credit given for work performed be deducted from any claims filed, rather than a prorated amount for the efforts made by the District. Inasmuch as most of these claims would be uncollectable by the insurance carrier, it would be to their benefit to work out this arrangement but they are adamant on this point. Their view is that our premiums will be less because of fewer claims. We, therefore, are put in the position of only working the juvenile where our deductible is not covered.

In spite of the impasse with the insurance carrier, our losses have been at a minimum. Since we have installed the first alarm system and initiated the rest of the above program, we have not had one serious occurrence of vandalism (over $100.00) or if so the persons involved have been apprehended, stolen items recovered, and either monetary or in-labor compensation has been received. No vandalism occurrence of any kind has been reported at any of the schools with alarm systems.

Involvement of the Community

There had been only a minimum of cooperation from the community in becoming involved with reporting acts of vandalism. Since we have publicized our efforts not only in prevention but also in restitution by those involved, a marked increase in communication is apparent.

The community response and attitude appears to have changed from indifference to concern and appreciation for the school district's efforts to save on the expenditure of their tax dollars.

Most of the principals have informed their PTA groups and also parents and neighbors of the schools concerning their problems. The principals have indicated that they have received cooperation and assistance in these areas. The community has called the authorities in time to prevent extensive damage and the calls have led to the apprehension of those involved in acts of vandalism.

Recommendations

With our detection systems, irregular work schedules, the cooperation of the community and a fair and sound restitution policy, we look forward to continuing success with our program at the Rowland School District. It is recommended that any district instituting a vandalism prevention program consider the following:

1. Assign a responsible administrator for following through on vandalism.
2. Use a multi-faceted approach such as use of a staggered work work for maintenance and custodial staff, public relations, and audio detection devices.
3. Work out an equitable proration program with the insurance carrier on claims where the District uses labor to satisfy any damages incurred.

ANNOTATED BIBLIOGRAPHY ON

SCHOOL VANDALISM

1. Association of School Business Officials of the United States and Canada. Proceedings of the Fifty-Second Annual Meeting, 1966. "Vandalism and Protective Devices," by Vance Emory, 233-237.

   A general discussion of how to prevent vandalism, which covers building design, detection systems, personnel procedures, and the "Power of Teaching."

2. _____. Proceedings of the Fifty-Second Annual Meeting, 1966. "School Vandalism: An Overview" by John Totin, Jr., 237-239.

   A provocative analysis of the causes of vandalism which ends by giving some specific suggestions for prevention.

3. Bradley, C.E. "Vandalism and Protective Devices," Journal of School Business Management, XXXIII (August, 1968), 32-39.

   An eye-opening summary of the definition and extent of vandalism in California public schools, with a list of fourteen specific recommended courses of action.

4. California Association of Public School Business Officials, Southern Section Insurance Research Committee. Digest of Information Relating to Vandalism and Malicious Mischief Insurance Coverage. Report presented at Annual Conference April, 1967. 12 pp.

   Gives some pointers to guide a person in developing an insurance program.

5. California Association of School Business Officials, Southern Section Insurance Research Committee. Procedures for the Collection of Vandalism Damages. Report for Annual Conference, 1971.

   Excellent compilation of suggestions on accounting for vandalism costs and methods of recovery of such costs.

6. California Association of Public School Business Officials, Southern Section Maintenance and Operations Research Committee. Deterring Vandalism. Report presented at Annual Conference April, 1967. 9 pp.

   Draws upon literature and results of a questionnaire covering Southern California school districts.

7. California Association of Public School Business Officials, San Diego--Imperial Section Insurance Research Committee. Study of Suggested Methods for Improving Protection Against Vandalism. Report presented at Annual Conference, April, 1969. 8 pp.

   Reviews methods of deterrence which school districts have used.

8. Edwards, L. F. "Insurance Costs: Up and Almost Away; School Property Losses Reach Record Heights," Nation's Schools, LXXXV (February, 1970), 51-55 ff.

Although aimed at surveying the current status of insurance coverage for liability and property damage exposures, this article is valuable for its recommendations on how to reduce the causes of insurance losses.

9. "Effects of Civil Disorder and Civil Disobedience on School District Insurance." CASBO Journal of School Business Management, XXXIII (May, 1969), 13-16.

10. Foreman, Enid G. "Vandalism! Maintaining and Protecting the School Plant," Catholic School Journal, LXVII (September, 1967), 70-72.

Stresses use of an overall problem-solving approach toward reduction and elimination of vandalism. The school administrator should consider who the vandals are, why the destruction is occurring, and take steps within the school program and with the community to try to solve the problem.

11. Gardner, John C. "Compus Vandalism--Who Pays?" American School and University, XLII (July, 1970), 14-15.

An article decrying the great change in behavior on college campuses which has resulted in widespread property damage and increased costs for maintenance and operations. Points out inevitable decline in standards for M & O and lowering of workers' morale.

12. Greenberg, Bernard. School Vandalism. A National Dilemma. Menlo Park, California: Stanford Research Institute, 1969. 39 pp.

A "must read"--in fact, a "must study"--item for anyone interested in school vandalism. Places problem in perspective, and suggests that "preventive" approach may be more cost-effective than reliance on "deterrence."

13. Grieder, Calvin. "Vandalism Symptomatic of Our 'Societal Sickness.'" Nation's Schools, LXXXV (April, 1970), 10 ff.

Insightful comments on the causes of vandalism. "But the clues boil down to the improvement of morale among students, teachers, and parents, and basically this rests on involvement."

14. "How Schools Combat Vandalism," Nation's Schools, LXXXI (April, 1968), 58-67.

A three-pronged coverage of the subject is presented: ways in which some school districts have reduced vandalism, a description of eight electronic security systems available, and a survey report which shows that vandalism is a growing problem.

15. Juillerot, Ernest E. "Burn the School--That'll Show 'Em!" Fire Journal, LX (March, 1966).

After describing the alarming increase in school fires which are maliciously set, this article speaks of two main ways of combating such losses, viz., the use of entrance detection systems and sprinkler systems.

16. L'Hote, John D. "Detroit Fights Theft and Arson," American School and University, XLII (July, 1970), 19-21.

A thought-provoking article which tries to turn attention to the causes of vandalism rather than ways of physically detecting and preventing occurrences of this problem. The author points out interesting variations among the Detroit schools in vandalism, and suggests workshops for principals to develop greater skills in positively affecting students' behavior.

17. "Lowering the Toll of Vandalism." American School and University, XXXVIII (August, 1966), 26-27.

Emphasizes the need for active steps to reduce the losses of vandalism, pointing out that a most significant factor is the design of the school plant.

18. O'Grince, Sylvester, and Harry S. Hodgins. "Public School Vandalism: How Baltimore Fights It," American School and University, XL (July, 1968), 30-32.

Describes specific preventive steps taken by this school district, with emphasis on reducing window breakage and achieving greater security. Plea is made for stressing security needs in design of new schools.

19. Smith, Donald C. "Vandalism in Selected Southern California School Districts: Nature, Extent, and Preventive Measures." Unpublished Doctor's dissertation, University of Southern California, 1966.

This is an exhaustive coverage of the subject which is both academically sound and of practical application in its ten recommendations.

20. Surra, Joseph. "A Program of Vandalism Protection in the Rowland School District," 1970.

21. "10 Basic Electronic Security Devices." American School and University, XLII (July, 1970), 25-26.

Concise review of electronic security systems gives basic orientation to field, with cost estimates and names of manufacturers.

22. "The High Cost of Vandalism." A Report by the Editors of School Product News. Cleveland, 1970. 9 pp.

23. "Ways of Fighting Vandalism." Today's Education, LVII (December, 1968), 28-32.

A symposium which gives highlights of the approaches which seven school districts use in combating the ravages of vandalism. The dominant theme is that development of student pride and widespread community involvement in the schools will reduce vandalism.

23. Young, George P., and Steven Soldatis. "School Vandalism Can be Stopped," American School and University, XLII (July, 1970), 22-23.

Reports survey showing that vandalism is not limited to large cities nor to schools in poorer neighborhoods. Principal theme is that prevention can best be secured by developing positive attitude on part of students and neighbors toward all school staff and program.

24. All of the following articles are in this periodical. American School and University, XXXVII (July, 1965).

"Security Systems for Schools and Colleges," 27-29.

"Security is Maximum With New Electronic Systems," 30-32.

"Contract Guard Service," 33 ff.

"How Security Guards Perform Their Work," 34-35.

These articles survey various detection systems available and the advantages of purchasing guard service, especially at the college level.

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VANDALISM IN ORANGE COUNTY SCHOOLS
July, 1972 through June, 1973

DISTRICT	NO. OF ACTS OF VANDALISM	COST OF REPAIR/REPLACEMENT	MAJOR CAUS
Anaheim City	89	$ 9,141.94	Fire, Break-In, Broken
Buena Park	111	10,459.81	Destruction, Broken Wi
Centralia	53	4,593.29	Theft, Broken Windows
Cypress	94	6,045.00	Theft, Destruction, Bro
Fountain Valley	347	18,723.94	Break-In, Broken Windo
Fullerton Elementary	300	16,860.60	Break-In, Misc.
Huntington Beach City	78	8,879.00	Theft, Broken Windows
La Habra City	59	3,559.46	Theft, Broken Windows
Los Alamitos	37	3,014.61	Broken Windows
Magnolia	130	5,547.50	Theft, Broken Windows
Ocean View	216	15,037.38	Theft, Broken Windows
San Joaquin**			
Savanna	41	3,845.00	Broken Windows, Paint D
Seal Beach	4	2,550.00	Fire
Trabuco**			
Tustin Elementary	89	7,917.15	Break-In, Destruction,
Westminster	294	9,235.87	Theft, Broken Windows
Yorba Linda	15	2,435.44	Theft, Broken Windows
TOTAL	1,957	$127,865.99	
Anaheim Union High	326	$124,900.00	Fire, Theft, Broken Win
Fullerton Union High	574	27,196.01	Theft, Broken Windows,
Huntington Beach Union High	113	4,732.74	Theft, Misc.
Tustin Union High	76	10,675.72	Theft, Destruction
TOTAL	1,089	$167,504.47	
Brea-Olinda Unified	67	$ 3,665.00	Destruction, Broken Win
Capistrano Unified	79	9,096.40	Theft, Destruction, Mis
Garden Grove Unified	2,010	83,706.50	Theft, Broken Windows
Laguna Beach Unified	62	3,850.00	Break-In, Broken Windo
Newport-Mesa Unified	279	32,347.56	Theft, Destruction
Orange Unified	318	33,335.99	Theft, Broken Windows,
Placentia Unified	479	48,125.37	Fire, Theft, Destructio
Santa Ana Unified	559	77,771.00	Theft, Destruction, Bro
TOTAL	3,853	$291,897.82	
No. Orange County Comm. Col.	32	$ 5,650.81	Fire, Misc.
Orange Coast Comm. Col.	37	17,133.30	Theft
Saddleback Comm. Col.	11	1,035.66	Theft
Rancho Santiago Comm. Col.	1	4,200.00	Break-In
TOTAL	81	$ 28,019.77	
GRAND TOTAL	6,980	$615,288.05	

*Less than $100.00

**Did not file report

DALISM IN ORANGE COUNTY SCHOOLS
July, 1972 through June, 1973

ENT	MAJOR CAUSES	RESTITUTION	SECURITY DEVICES	SECURITY GUARDS
	Fire, Break-In, Broken Windows	$ 756.87	No	No
	Destruction, Broken Windows	--	Yes	No
	Theft, Broken Windows	274.94	Yes	No
	Theft, Destruction, Broken Windows	100.00	No	Yes
	Break-In, Broken Windows, Misc.	167.46	No	No
	Break-In, Misc.	2,594.42	Yes	No
	Theft, broken Windows	1,786.55	Yes	No
	Theft, Broken Windows	245.31	No	No
	Broken Windows	359.60	Yes	No
	Theft, Broken Windows	--	Yes	No
	Theft, Broken Windows	1,641.38	No	No
	Broken Windows, Paint Damage	--	No	No
	Fire	1,800.00	Yes	No
	Break-In, Destruction, Broken Windows	2,053.81	No	No
	Theft, Broken Windows	1,781.06	No	No
	Theft, Broken Windows	68.83	Yes	No
		$13,630.24		
	Fire, Theft, Broken Windows	$24,658.00	Yes	Yes
	Theft, Broken Windows, Misc.	2,793.48	Yes	Yes
	Theft, Misc.	38.37	Yes	Yes
	Theft, Destruction	3,500.00	No	No
		$30,989.85		
	Destruction, Broken Windows	$ 93.00	No	Yes
	Theft, Destruction, Misc.	3,009.21	No	No
	Theft, Broken Windows	1,447.35	Yes	Yes
	Break-In, Broken Windows	--	No	No
	Theft, Destruction	3,197.07	Yes	No
	Theft, Broken Windows, Misc.	3,131.39	No	No
	Fire, Theft, Destruction	22,698.83	Yes	No
	Theft, Destruction, Broken Windows	1,010.21	Yes	Yes
		$34,587.06		
	Fire, Misc.	$ --	No	Yes
	Theft	5,471.15	Yes	Yes
	Theft	638.46	Yes	Yes
	Break-In	--	Yes	Yes
		$ 6,109.61		
		$85,316.76		

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VANDALISM IN ORANGE COUNTY SCHOOLS

July, 1971 through June, 1972

DISTRICT	NO. OF ACTS OF VANDALISM	COST OF REPAIR/REPLACEMENT	MAJOR CAUSES
Anaheim Elementary	322	$ 13,306.00	Fire, Broken Windows
Buena Park Elementary	40	6,775.00	Broken Windows, Theft
Centralia Elementary *			
Cypress Elementary	137	7,316.05	Destruction, Broken Windows
Fountain Valley Elementary	636	27,769.49	Misc. Broken Windows, Theft
Fullerton Elementary	283	35,956.98	Fire, Theft, Broken Windows
Huntington Beach Elementary	18	2,939.38	Theft
La Habra City Schools	37	3,989.82	Theft, Broken Windows
Los Alamitos Elementary *			
Magnolia Elementary	24	10,335.00	Theft, Broken Windows
Ocean View Elementary	---	13,444.00	Destruction, Broken Windows
San Joaquin Elementary	26	1,499.19	Break In, Destruction
Savanna Elementary	8	1,448.00	Break In, Theft
Seal Beach Elementary	2	150.00	Broken Windows
Trabuco Elementary	none	none	none
Tustin Elementary	84	5,672.00	Theft, Broken Windows
Westminster Elementary	114	16,178.55	Theft, Broken Windows, Break In
Yorba Linda Elementary	22	1,342.46	Broken Windows, Destruction
TOTAL	1,753	$148,121.92	
Anaheim Union High	221	25,554.00	Theft, Broken Windows
Fullerton Union High	277	42,056.37	Destruction, Broken Windows, Misc.
Huntington Beach Union High	87	9,493.94	Theft, Destruction
Tustin Union High	82	14,991.91	Break In, Theft, Destruction
TOTAL	667	$ 92,099.22	
Brea-Olinda Unified	36	9,058.00	Fire, Broken Windows
Capistrano Unified	91	8,178.54	Theft, Broken Windows
Garden Grove Unified	2,809	79,533.00	Broken Windows, Misc., Theft
Laguna Beach Unified	4	1,728.00	Break In
Newport-Mesa Unified	177	18,943.91	Theft, Broken Windows
Orange Unified	253	58,463.67	Fire, Broken Windows
Placentia Unified	663	22,745.49	Destruction, Theft, Broken Windows
Santa Ana Unified	413	284,996.00	Fire, Theft, Broken Windows
TOTAL	4,446	$493,616.61	
North Orange County	75	7,646.54	Theft, Broken Windows,
Orange Coast Community College	45	9,658.00	Theft
Saddleback Community College	11	779.31	Theft, Fire
Rancho Santiago	20	5,505.00	Break In, Theft
Lowell Joint	240	10,300.21	Broken Windows, Destructior
TOTAL	391	$ 33,889.06	
GRAND TOTAL	7,257	$757,726.81	

* No Report

SCHOOLS

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ES	RESTITUTION	SECURITY DEVICES	SECURITY GUARDS
en Windows	$ 1,133.40	No	No
dows, Theft	none	Yes	No
n, Broken Windows	800.00	No	No
en Windows, Theft	1,911.07	No	No
t, Broken Windows	600.10	Yes	No
	485.09	No	No
ken Windows	828.28	No	No
ken Windows	none	Yes	No
n, Broken Windows	134.15	No	No
Destruction	none	No	No
Theft	none	No	No
dows	none	Yes	No
	----	No	No
ken Windows	2,911.00	No	No
ken Windows, Break In	35.00	No	No
dows, Destruction	40.32	No	No
	$ 8,926.41		
ken Windows	2,290.00	Yes	No
n, Broken Windows, Misc.	300.00	Yes	Yes
truction	none	Yes	Yes
Theft, Destruction	5,236.54	No	No
	$ 7,826.54		
en Windows	5,000.00	No	Yes
ken Windows	521.72	No	No
dows, Misc., Theft	922.21	Yes	Yes
	$ 613.00	No	No
ken Windows	3,194.67	Yes	No
en Windows	2,659.46	No	No
n, Theft, Broken Windows	4,423.23	Yes	No
. Broken Windows	500.00	Yes	Yes
	$17,810.29		
ken Windows,	none	No	Yes
	2,207.00	Yes	No
	none	No	Yes
Theft	none	No	Yes
ows, Destructior	3,563.64	No	No
	$ 5,790.64		
	$40,423.93		

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VANDALISM IN ORANGE COUNTY SCHOOL

January 1970 through December 1971

DISTRICT	NO. OF ACTS OF VANDALISM	COST OF REPAIR/REPLACEMENT	MAJOR CAUSES	E P
Anaheim Elementary	30/month	$ 8,814.71 (1 yr.)	fire ($4,000)	routine
Buena Park Elementary	26 (2 yrs.)	3,722.00 (½ yr.)	burglary ($5,000)	burglar
Centralia Elementary	unknown	30,000.00 (2 yrs.)	none	none
Cypress Elementary	not available	3,184.20 (2 yrs.)	burglary ($4,100)	none
Fountain Valley Elementary	1158 (2 yrs.)	35,000.00	windows, sprinklers, lights	building
Fullerton Elementary	no record	12,190.24 (1 yr.)	fire	burglar
Huntington Beach Elementary	46 (2 yrs.)	9,015.00	none	police pa
La Habra Elementary	47 (2 yrs.)	7,700.00	none	night cu
Los Alamitos Elementary	29 (1 yr.)	11,647.82	none	alarm sy
Magnolia Elementary	59 (1½ yrs.)	10,633.12	none	intrusion
Ocean View Elementary	290 (1 yr.)	17,210.00	glass breakage ($1,700)	evening
San Joaquin Elementary	75 (2 yrs.)	3,500.00	fire ($109,500 additional)	closer su
Savanna Elementary	21 (1 yr.)	2,852.00	burglary ($690)	none
Seal Beach Elementary	1 (2 yrs.)	500.00	window breakage ($500)	police pa
Trabuco Elementary	none	none	none	none
Tustin Elementary	128 (2 yrs.)	11,113.68	thefts	none
Westminster Elementary	231 (2 yrs.)	7,020.00 (1 yr.)	musical instruments ($2,100)	bars on
Yorba Linda Elementary	27 (1½ yrs.)	2,464.79	none	fire and
TOTAL	2058	176,567.56	not applicable	not appli
Anaheim Union High	164 (1 yr.)	96,508.00 (1½ yrs.)	none	silent al
Fullerton Union High	277 (1 yr.)	48,869.64 (2 yrs.)	windows - 1 incident ($1,142)	electroni
Huntington Beach Union High	208 (2 yrs.)	75,000.00	fire ($55,000)	alarm sys
Tustin Union High	149 (2 yrs.)	21,511.00 *	none	special p
TOTAL	798	241,888.64	not applicable	not appli
Brea-Olinda Unified	75 (2 yrs.)	5,223.00	glass breakage	extra lig
Capistrano Unified	66 (1½ yrs.)	6,871.00	glass, office machines, roof tiles	extra pat
Garden Grove Unified	137 (½ yr.)	92,861.96 (1 yr.)	fire ($10,000)	alarm sys
Laguna Beach Unified	3 (2 yrs.)	600.00	ink and glue on machines ($300)	police pa
Newport-Mesa Unified	160 (2 yrs.)	8,295.00	windows, sprinklers, fires	
Orange Unified	95 (1 yr.)	52,755.00	fire ($38,000)	fire call
Placentia Unfied	1528 (2 yrs.)	30,345.00	windows ($1,185)	alarms, n
Santa Ana Unified	443 (2 yrs.)	33,501.52	windows, thefts	alarm sys
TOTAL	2507	230,452.48	not applicable	not appli
Coast Community College	41 (1½ yrs.)	15,622.00	burglary ($3,089)	fencing,
North Orange County	33 (1 yr.)	1,245.12	windows, sprinklers, drinking fountains	extra pat
Rancho Santiago	35 (2 yrs.)	1,750.00	none	none
Saddleback Community College	none	none	none	none
TOTAL	109	18,617.12	not applicable	not appli
GRAND TOTAL	6272	$667,525.80	not applicable	not appli

* Duplicated by Orange County Department of Education...272144

COUNTY SCHOOLS

cember 1971

USES	EXTRA MEANS OF PREVENTION	AVERAGE FAMILY INCOME
	routine patrol	$12,500
	burglar alarm system	$10,000 - $25,000
	none	$10,000 - $25,000
	none	$10,000 - $25,000
rs, lights	building safety (plastic type windows)	$14,000
	burglar alarms, security officer	unknown
	police patrol	$10,000 - $25,000
	night custodian	$10,000 - $25,000
	alarm system	unknown
1,700)	intrusion alarms	under $10,000
ditional)	evening custodians	$10,000 - $25,000
	closer surveillance	$10,000 - $25,000
$500)	none	under $10,000
	police patrols	$10,000 - $25,000
	none	unknown
	none	$10,000 - $25,000
s ($2,100)	bars on windows & skylights, spasmodic patrols	under $10,000
	fire and intrusion alarms	$14,000
	not applicable	not applicable
	silent alarms	$10,000 - $25,000
nt ($1,142)	electronic burglar alarms, heat rise detectors	unknown
	alarm system, four extra security guards	$10,000 - $25,000
	special padlocks, extra security on holidays	$10,000 - $25,000
	not applicable	not applicable
	extra lights, more security at graduation	$10,000 - $25,000
ines, roof tiles	extra patrols at graduation	under $10,000
	alarm system	$10,000 - $25,000
chines ($300)	police patrols, lights on at night	$10,000 - $25,000
s, fires		
	fire call boxes, security plates on locks	$10,000 - $25,000
	alarms, new keys for locks	$11,000
	alarm systems, night custodians	unknown
	not applicable	not applicable
	fencing, alarm system	$10,000 - $25,000
s, drinking fountains	extra patrols, alarm system	$10,000 - $25,000
	none	$10,000 - $11,500
	none	unknown
	not applicable	not applicable
	not applicable	not applicable